Mumbai University

Question Paper

[CBSGS – 75:25 Pattern] (October – 2017)

PAPER - IV

ELECTIVE

Geographic

Information

System

Time: 2 ½ Hours

N.B.: (1) *All Question are Compulsory.*
  (2) *Make Suitable Assumptions Wherever Necessary And State The Assumptions Made.*
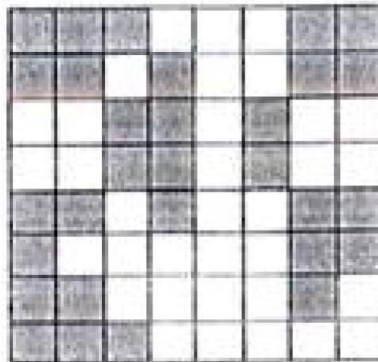 **(3)** *Answer To The Same Question Must Be Written Together.*
  (4) *Number To The Right Indicates Marks.*
  (5) *Draw Neat Labeled Diagrams Wherever Necessary.*
  (6) *Use of Non – Programmable Calculator is allowed.*

Q.1 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Write a short note on TIN Model. **(5)**
(B) Explain spatial reference information of Raster Data. **(5)**
(C) Draw Quad Tree for the following: **(5)**

  Also, code the spatial index of the shaded feature.
(D) What are the different types of projections based on preserved by property? **(5)**

Q.2 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain with example the Neutral Format Data Exchange. **(5)**
(B) Explain different types of Field Data. **(5)**
(C) Explain Affine Transformation. **(5)**
(D) List the common resampling methods and explain them. **(5)**

Q.3 ATTEMPT ANY TWO QUESTIONS: (10 MARKS)

(A) Explain the join and relate operations of tables in Relational Database. **(5)**
(B) List the types of Attribute Data based on Measurement Scale. Explain. **(5)**
(C) List different types of database design. Explain any two. **(5)**
(D) Define the following terms: **(5)**
  (i) *Chart Map*
  (ii) *Primary Key*
  (iii) *Numeric Data*
  (iv) *Feature Attribute Table*
  (v) *Interval Data*

Q.4   **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A)   Describe brushing as technique for Data Exploration.   **(5)**

(B)   Explain feature selection by Spatial Relationship Data Query with suitable example.   **(5)**

(C)   Explain with suitable example Spatial Data Query.   **(5)**

(D)   What is the output of the following for a statement (NOT(slope = 1) AND (NOT(Aspect = 2))   **(5)**

Q.5   **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A)   What is the Physical Distance Measure Operation?   **(5)**

(B)   Write the purpose of the following map manipulation operations with example: **(5)**
   (i)   *Erase*
   (ii)   *Update*
   (iii)   *Select*
   (iv)   *Eliminate*
   (v)   *Clip*

(C)   What are the applications of overlay?   **(5)**

(D)   Explain Spatial Autocorrelation with example.   **(5)**

Q.6   **ATTEMPT ANY TWO QUESTIONS: (10 MARKS)**

(A)   Explain the Thin-Plate Splines Local Method.   **(5)**

(B)   Explain the use of bringing process used in kriging?   **(5)**

(C)   Explain the Inverse Distance Weighted Interpolation Local Method.   **(5)**

(D)   Explain the Thiessen Polygons Local method.   **(5)**

Q.7   **ATTEMPT ANY THREE QUESTIONS: (15 MARKS)**

(A)   Explain the Thin-Plate Splines Local Method.   **(5)**

(B)   Explain the use of bringing process used in kriging?   **(5)**

(C)   Explain the Inverse Distance Weighted Interpolation Local Method.   **(5)**

(D)   Explain the Thiessen Polygons Local method.   **(5)**

(E)   Explain the Thin-Plate Splines Local Method.   **(5)**

(F)   Explain the use of bringing process used in kriging?   **(5)**